

IN THE CLAIMS

Claims 1-9 (cancelled).

10. (New) A storage apparatus comprising:

a first storage subsystem connected to a plurality of host computers via a first interface;

a second storage subsystem connected to the first storage subsystem via a second interface so as to copy write data written in the first storage subsystem from the host computers onto the second storage subsystem from the first storage subsystem, thereby protecting the write data in the first and the second storage subsystems in a multiplex manner; and

a storage control unit for the first storage subsystem, having: a first threshold for controlling for each of the host computers an occupancy ratio of the write data whose copy to the second storage subsystem is incomplete in a data buffer in the first storage subsystem, and control logic for delaying the processing of a data write request from each of the host computers on the basis of the first threshold which is set for each of the host computers,

wherein data received from at least one of the host computers is converted to a format compatible with transfer to the second storage subsystem, prior to copying thereof to the second storage subsystem.

11. (New) The apparatus of claim 10, wherein:

the at least one host computer is a mainframe computer, and

the first storage subsystem receives data from the mainframe computer in CKD format.

12. (New) The apparatus to claim 11, wherein the first storage subsystem converts the data received in CKD format into a format having fixed-length data blocks.

13. (New) The apparatus of claim 10, wherein the first storage subsystem performs the conversion before loading the data from the at least one of the host computers into the data buffer.

14. (New) The storage subsystem according to claim 10, wherein the control logic in the storage control unit causes the processing of a data write request from a host computer to be delayed when the occupancy ratio of the write data whose copy to the second storage subsystem is incomplete in the data buffer in the first storage subsystem has reached the first threshold.

15. (New) The storage subsystem according to claim 10, wherein the storage control unit further has a second threshold for controlling an occupancy ratio of an aggregate total of the write data whose copy to the second storage subsystem is incomplete in the data buffer by the plurality of host computers, and the storage control unit further includes control logic for controlling a start of operation for delaying the processing of the data write requests from the host computers, on the basis of the second threshold.

16. (New) The storage subsystem according to claim 15, wherein the control logic for controlling the start of the operation causes the processing of the write requests on the basis of the first threshold to be delayed when the aggregate total of the write data whose copy to the second storage subsystem is incomplete has reached the second threshold.

17. (New) The storage subsystem according to claim 10, wherein the first interface consists of at least one of a mainframe-system host interface and an open-system host interface, and the second interface consists of a fibre channel interface.

18. (New) A storage subsystem, comprising:
a storage array for storage of data;
at least one first interface, for receiving data for storage in the disk array from a plurality of host computers;
a second interface for transfer of data for copying to a remote storage subsystem;
a data buffer for storing data received from the host computers, for transfer through the second interface for copying to the remote storage system; and
a storage control unit, having: a threshold for controlling for each of the host computers an occupancy ratio of the data whose copy to the remote storage subsystem is incomplete in the data buffer, and control logic for delaying the processing of a data write request from each respective host computer on the basis of the threshold which is set for each respective host computer,

wherein data received from at least one of the host computers is converted to a format compatible with transfer to the remote storage subsystem, prior to transfer through the second interface for copying thereof to the remote storage subsystem.

19. (New) The storage subsystem of claim 18, wherein the at least one first interface provides an interface for a mainframe computer and is adapted to receive data from the mainframe computer in CKD format.

20. (New) The storage subsystem of claim 18, wherein the conversion converts the data received in CKD format into a format having fixed-length data blocks.

21. (New) The storage subsystem of claim 18, wherein the conversion is performed before loading the data from the at least one of the host computers into the data buffer.

22. (New) A method of controlling a master storage subsystem connected to a plurality of host computers via a first interface and connected to a remote storage subsystem via a second interface so as to copy write data from the host computers to the remote storage subsystem, thereby protecting the write data in a multiplex manner, the method comprising:

setting for each of the host computers a first threshold for controlling an occupancy ratio of the write data whose copy to the remote storage subsystem is incomplete in a data buffer in the master storage subsystem;

converting data received from at least one of the host computers to a format compatible with transfer to the second storage subsystem, prior to copying thereof to the second storage subsystem; and

delaying processing of a data write request from each of the host computers based on the first threshold is set for each of the host computers.

23. (New) The method of claim 22, wherein:

the at least one host computer is a mainframe computer, and

the first storage subsystem receives data from the mainframe computer in CKD format.

24. (New) The method to claim 23, wherein the step of converting comprises converting the data received in CKD format into a format having fixed-length data blocks.

25. (New) The method of claim 22, wherein the converting step is performed before loading the data from the at least one of the host computers into the data buffer.

26. (New) The method of claim 22, wherein in the delaying step, the processing of the data write request from one of the host computers is delayed when the occupancy ratio of the write data from the one host computer in the data buffer in the master storage subsystem has reached the first threshold.

27. (New) The method of claim 22, further comprising:
setting a second threshold for controlling an occupancy ratio of an aggregate total of the write data in the data buffer by the plurality of host computers; and
controlling a start of the delaying step based on the second threshold.

28. (New) The method of claim 27, wherein the step of controlling the start of the delaying step comprises delaying processing of a write request based the first threshold when the aggregate total of the write data whose copy to the remote storage subsystem is incomplete has reached the second threshold.